DOCUMENT RESUME

ED 432 071 EC 307 273

AUTHOR Ramirez, Judy
TITLE Sensory Integration and Its Effects on Young Children.
PUB DATE 1998-00-00
NOTE 14p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Autism; *Behavior Patterns; Child Development; Infants; Intervention; *Perceptual Impairments; *Sensory Integration; Tactual Perception; *Therapy; Young Children

ABSTRACT

This paper provides an overview of the literature on sensory integration in young children. First it explains the importance of "sensory integration" in child development and normal functioning. It goes on to note signs of a sensory integration dysfunction (such as hyper-or hypo-sensitivity to touch, poor coordination, and poor behavioral control). Normal sensory development in infants is briefly reviewed. Effects of specific sensory impairments including the visual, tactile, and vestibular senses are noted. Examples of sensory integration dysfunction in autistic children are offered. Treatment for sensory integration dysfunction is discussed with emphasis on sensory integration therapy for tactile defensive children. (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 432 071

Sensory Integration and Its Effects on Young Children.

Judy Ramirez

Lehman College

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☑ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Ramirez

EC 307 273

BEST COPY AVAILABLE

Abstract:

The purpose of this article is to provide teachers with information about sensory integration and its importance to young children. Various articles were reviewed to present the reader with enough background information to understand sensory integration. Basically, sensory integration is the process that allows people to interact with their environment . We take in information from the outside world through our senses and then combine it with the information we have inside our bodies. If we are adequately processing the information, then our brains can send messages to the proper parts of our bodies. Thus, we are able to form relationships, move confidently and appropriately in space, tolerate a variety of textures and learn our academic subjects close to grade level; to name a few examples. However, some children have a sensory integration dysfunction and these tasks and others are too difficult to accomplish. They are not born with the sensory connections to the world, that so many of us have automatically. There are various treatments available that can help these children learn how to cope with their dysfunction.

WHAT IS SENSORY INTEGRATION?

Responding to a fire drill, stepping off a curb and remaining balanced, hitting a baseball, and stopping your car at a red light are all ways in which our senses are working to organize our bodies in reaction to the environment. Now, imagine a bell ringing for a fire drill, but that sound does not mean anything to our brains, touching something hot , but not feeling pain, or constantly tripping over nothing and feeling unbalanced with every step you take. This combination of the incoming messages we get from our senses and the way our brains integrate the input it receives, is called sensory integration (Southpaw,1990, p.2). It is through our senses that we explore our

environment and hence , are capable of learning. Most of us may not think about how important our sensory development is, because it occurs automatically (Ayers, 1979, p.3). The brain is constantly receiving messages from the environment through our senses--tactile, smell, hearing, sight, and taste (J. McGee, personal communications, 1998). It is the way we are informed of where our bodies are in space and how they are interacting with the environment. "Sensory Integration helps us move through space (walking, running), react to danger (recoil from a sharp object or extreme heat) and coordinate the movements of our head, eyes, and hands (lifting our head to read from the blackboard and then writing on paper on a desktop) (J.Weaver, personal communications, 1998). For some children, sensory integration is not an automatic process. They have what is called a sensory integration dysfunction. Typically, if the senses are not taking in messages from the environment because of a physiological reason, one can usually compensate by using other senses. For example, a deaf person can not hear, but they can see. However, if the cause is a psychological one, the person has much more difficulty compensating (McGee, 1998). For children, this inadequate sensory integration effects their performance in the classroom, at home, on the playground and during social interactions with others. As a result, these children are more likely to develop learning and/or behavior problems (Ayers, 1979, p.7).

WHAT TO LOOK FOR:

Not everyone has perfect sensory integrative functions. Some have adequate sensory integration and others have poor sensory integration. Those who are unable to cope with the sensory input they receive from their environment (because of inadequacies in more than one area) may exhibit certain signs. According to Sensory Integration International, the following signals may indicate the presence of a sensory integration dysfunction. The child may be overly sensitive to touch, sights or sounds. They may withdraw from hugs, certain lights or colors, certain clothing and food textures and avoid certain playground activities. A child may also be undersensitive and hence, not feel as much as they should. For example, they may be badly cut and not feel a thing. The child may have an unusually high or low activity level and or have coordination problems. Remember that coordination not only relates to balancing movement, but also to performing fine motor tasks. For example, "Without clear messages from the hands and eyes, a child can not color between the lines, put a puzzle together, cut accurately with scissors, or paste two pieces of paper together neatly (Ayers, 1979, p.9)." Also evident are delays in speech/language and poor control over behavior. If someone invades a child's space by bumping into them, the child may react by pushing or hitting. Another example in the classroom is, when there is too much going on at once and the child becomes overstimulated. The child becomes confused and frustrated and may

appear to be distracted and unfocused . These are all some indicators of a sensory integration dysfunction. It is important to remember that no one has perfect sensory integration. However, if a child has many of the above mentioned indicators, most of the time, then there is a strong possibility that the child has a dysfunction.

NORMAL SENSORY DEVELOPMENT IN INFANTS

In order to fully understand the importance of adequate sensory integration, one should know a little about normal sensory development . The following brief discussion focuses on sensory development in infants, since that is one of the earliest times our senses begin to function. According to Susan Benner in "Assessing Young Children with Special Needs", if the tactile sensory development occurs normally, infants tolerate touch. Then a sequence of events occur, the next being the ability of an infant to distinguish items by tactile features (smooth, wet, hot, bumpy,etc) (Benner, 1992, p. 261). This tactile sense is very important and largely used primarily by children to explore their environment. "...It is very important for allowing us to perform many skills and to feel comfortable and at ease with many situations" (Mailloux, summer 1993, p.12). Visual sensory development includes features such as visual tracking, eye contact, reaching and eye- hand/foot coordination (Benner, 1992, p.261) . These functions allow infants to reach for their parents, take their first step and further explore their environment. The auditory senses enable a child to attend to a specific sound, once it is

located. For example, if a parent is calling a child's name to come to them, the child should turn to the adult and react. Sounds also give specific events and objects certain meaning for a child (Benner, 1992, p.261-262). It is like hearing the doorbell ring and moving towards the door to see who it is. Gustatory (taste) and olfactory (smell) sensory development help a child form opinions on what they like or dislike (Benner, 1992, p. 262). As a child gets older, if they smell smoke, they may alert you to a fire. These senses are also ways in which children learn more about their environment. The vestibular system is important for control of the movements, especially gross motor activities and balance. It is responsible for sending the sensory input we receive from our environment, to the correct places. It is our 'safety net', telling us where we are in relation to space and where we are going--gravity and movement (Benner, 1992, p.262).

SENSORY IMPAIRMENTS

Children with a sensory integration dysfunction, can not rely on the other senses to compensate for the area that is inadequate. These children can not organize this continuous flow of information they are receiving from their senses. Usually, these children are unable to tolerate the way this information is being received (ex: by the touch of it, smell of it, taste of it, etc.). As a result they become very defensive towards the input. Other reactions for these children include over/under sensitivity to noises, tastes, smells, or textures. For

example, children who are undersensitive tactile, "...May not feel as much pain as others and often seem unaware of tactile sensations that should be noticeable" (Mailloux, Fall 1992, p.10). In other words, they do not have instincts that should automatically be there for them. Children with a sensory integration dysfunction may also appear very clumsy, easily distractible, have a language delay or seem to miss details (Ayers, 1979, p.8).

According to Benner, if a child has a visual impairment , they usually do not have that tracking or eye gaze that a typically developing infant possesses. The infant is also less likely to reach toward a desired object or reciprocate an adults smile. Without this awareness of another person, caregivers find it more difficult to bond with infants. Benner also explains , that when an infant has an auditory deficit, they do not correctly hear words or tones, which interfere with a child's language acquisition. If the impairment effects the tactile system, infants will avoid or retract from contact with an adult, especially during feeding, play, or cuddling. However, these infants still crave that tactile input. As a result, the infants will usually try to compensate this need by hitting themselves, biting themselves or rocking themselves. Other reactions include an aversion to certain foods, because of texture, a desire to keep hands clean and avoidance of certain clothing textures (Deyan, Fall 1992, p.10). Although some children do feel too much, others do not feel enough from the tactile input. These children usually have the need to

touch everything they can or have a hard time sitting and attending to the teacher, without fidgeting with something.

One of the most important systems that we have is the vestibular system. If there is an impairment with the vestibular system, children have difficulty coordinating their eye movements with their head movements and balance and coordination (Mailloux, Spring 1993, p.11). This makes something as simple as walking down the street, a difficult and clumsy task for the child. The child can not organize the various input they are receiving from the ground (smooth, rough, etc), from the objects and people on the street (maneuver his/her body to avoid things in their path), or their own sense of stability. This function has to become automatic so, that the child can focus on where they are going, rather than what they are doing (Mailloux, Winter 1993-94, p.12).

AUTISTIC CHILDREN:

One such population of children that have these sensory integration problems, and the specific group I teach, are the autistic. Autistic children usually keep to themselves and do not like to be around too many people. They have difficulty forming relationships with peers, have limited, if any, speech, tend to tantrum, have emotional problems and some can occasionally be aggressive toward others. Basically, for an autistic child, there are three areas of poor sensory processing : "One, sensory input is not being registered correctly in the child's brain and so he pays very little attention to most things, while at

other times he overreacts. Two, he may not modulate sensory input well, especially vestibular and tactile sensations and so he maybe gravitationally insecure or tactile defensive. Three, the part of his brain that makes him want to do things, especially new or different things is not operating normally and so the child has little or no interest in doing things that are purposeful or constructive (Ayers, 1979, p. 124)."

WHAT CAN BE DONE?

A child with a sensory integration dysfunction can not automatically compensate for the inadequacies on their own. They need the help and support of parents, care givers, teachers, and physical or occupational therapists. If a child is showing signs of any of these impairments, it should be recognized as a dysfunction and not a behavior problem at home or school. Once detected, an evaluation by a professional can be done to determine the severity of the dysfunction and what specific interventions to use.

Within my classroom, we work very closely with the occupational therapist to design specific treatments for these children, in hopes of having some positive effect on them. Unfortunately, not all autistic children benefit from the sensory integration therapy. However, you never can tell which child will benefit , so we try to provide a variety of sensory experiences to help organize the children. Treatment for sensory integrative dysfunctions can encompass many things and should be performed under the guidance of a trained professional, like

an occupational therapist. Since there are so many treatments, I will limit myself to those we use for tactile defensive children. When we have a child who is tactile defensive, we will use deep pressure, such as wrapping a child snugly in a large blanket and then unrolling the blanket. We may also take a large beanbag chair and sandwich the child in the middle of it. This provides the child with stimulation that their brains need to regulate their bodies. We also try to brush the children's skin each day -once in the morning and once in the afternoon. The brushing of the skin stimulates many tactile impulses, which then send more input to the brain. Depending on the child, the pressure of the brushing may change. Some children need the light pressure of the brush, whereas most other children crave more of the deep pressure and find the light pressure rather irritating. We also use a variety of textures to create fun activities for the children. We created what we call "Feel Boxes." For example, one child may have a shoe box filled with beans, rice, and little mini toys. For the lower functioning children, we would allow them to just explore the box with their hands. The higher functioning children may be encouraged to "Find the blue car or the most pennies." The boxes can be filled with other items such as oatmeal, powder, different textured papers, birdseed,etc.. Other ways of increasing their tolerance to sensory material that we use include covering a specific area with the coarse, bumpy mats that you usually wipe your feet on, and have the children walk all over it barefooted. As one can tell, there are numerous ways to

integrate tactile activities into a child's day to enhance their touch perception. The main goal of all of these activities "...is to normalize the way the nervous system registers and interprets touch information (Mailloux, Fall 1992, p.10)." Providing the children with a variety of ways to tactile explore their environment and allowing the child to determine if they like it or not, has helped our days run a lot smoother.

CONCLUSION

Our sensory development is so important for being able to learn and cope in this world. It is through our senses that we are connected to the world. We use the senses to explore and learn from our environment. When there is a dysfunction with our sensory development, it i harder to interact and enjoy this beautiful world. However, there is therapy available to help children learn to cope. Sensory integrative therapy should be fun and inviting for the children. It should provide the children with the necessary input they did not automatically develop on their own. The therapy is a way of stimulating specific impulses to send to the brain, so a function can be performed. If this happens repeatedly, then those functions can better develop. Implementing these treatments should result in the child becoming more organized and calmer. However, we should all be aware that not every child will benefit from the sensory integration therapy.

LEARNING MORE ABOUT SENSORY INTEGRATION

"A Parents Guide To Understanding Sensory Integration," provides a list of additional resources for parents and teachers to contact.

Occupational or Physical therapy department of your local children's hospital or school district

The American Occupational Therapy Association
1383 Piccard Drive
P.O. Box 1725
Rockville,MD 20850-0822
(301) 948-9626

Sensory Integration International
1402 Cravens Avenue
Torrance,CA 90501-2701
(213)533-8338

"Sensory Integration and the Child" by A.Jean Ayres
Published by Western Psychological Services (1979).

Sensory Integration Quarterly -a newsletter

References

Ayers, A (1979). Sensory integration and the child. Los Angeles, California: Western Psychological Services.

Benner, S. (1992).Sensory and motor assessment. In N. Silverman, & Till (Eds.), Assessing young children with special needs (pp.225-274). White Plains, New York : Longman Publishing Group.

Deyan, J. (Fall 1992). Make every weekend a sensory experience. Sensory Integration Quarterly, 10-11.

Mailloux, Z. (Summer 1993). How can ordinary movement be scary? Sensory Integration Quarterly, 12.

Mailloux (Spring 1993). The vestibular system: why is it so critical? Sensory Integration Quarterly, 11.

Mailloux (Winter 1993-94). Discover proprioception a "hidden" sense. Sensory Integration Quarterly, 12.

Sensory Integration International Inc. (1991). A parent's guide to understanding sensory integration [Brochure]. Torrance, California.

Southpaw Enterprises Inc. (1990). Sensory integration: a foundation for development. Dayton, Ohio: Author.